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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,208	10/05/2004	Mattias Johannesson	35947-207175	4410

26694 7590 07/31/2009

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EXAMINER	
BERARDESCA, PAUL M	
ART UNIT	**PAPER NUMBER**
2622	
MAIL DATE	**DELIVERY MODE**
07/31/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/510,208	JOHANNESSON ET AL.	
	Examiner	Art Unit	
	PAUL BERARDESCA	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _26 May 2009_.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _3-20_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _3-20_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Initially, the examiner would like to remind Applicant that because there was no traversal of the examiner's official notice statements in the previous office action in the arguments filed 5/26/2009, all features that were officially noted are now considered to be admitted prior art.

Applicant's arguments filed 5/26/2009 have been fully considered but they are not persuasive. Applicant argues that "Leonard does not suggest regions having different pixel densities. Eberhard et al. also does not suggest a sensor that includes two different regions that measure different information about an object with different resolutions. Rather, Eberhard et al. suggests a sensor that includes regions that capture the same type of information with different resolutions". The examiner cannot agree. Although Leonard may not teach a sensor with multiple areas of different resolution, Eberhard certainly does. Eberhard specifically states the outer area 12 of the sensor has medium resolution and the inner area 14 of the sensor has high resolution. In response to Applicants argument that Eberhard captures the same type of information with different resolutions, the Examiner submits that Eberhard explicitly states that it uses the high resolution portion of the image sensor to capture zones of a manufacturing part "where flaws are more critical to life than in other sections of the part (e.g., high stress regions, regions where cooling of the casting is more difficult, etc.)"

(col. 7 lines 25-32), and uses the low resolution portion of the image sensor to capture adjacent zones of the manufacturing part where flaws are less critical. Therefore, Eberhard does suggest a sensor that includes regions that capture **different information** (information pertaining to portions of an object where flaws are more critical and information pertaining to more generic portions of an object) with different resolutions.

Leonard teaches an image sensor with two different regions, one for capturing 2D data of an IC package, and one for capturing 3D data of the IC package. The only difference between Leonard and the instant application is that the 2D data is not imaged at a higher resolution than the 3D data. Leonard goes on to explain that the 3D data is captured by combining separate 3D profiles of the height which are determined by measuring the amount of light from the lasers 12 and 14 reflected off of different portions of the object (col. 6 lines 6-30). The 2D imaging portion of the image sensor captures a more detailed image wherein leads, edges, and corners need to be determined through processing (col. 12 lines 33-35). Eberhard teaches an image sensor with a high resolution portion and a low resolution portion wherein the high resolution portion is used to capture areas where flaws are more critical and high performance inspection is most critical, and capturing the rest of the object with the low resolution portion (col. 7 lines 25-35). Eberhard states that by only using the high resolution portion for certain parts of the object, the system complexity can be reduced along with higher throughput and lower cost (col. 7 lines 15-20).

It is clear that this same technique can be applied to Leonard. Unlike the 2D data, the 3D data is not processed to determine any particular characteristics of the object. Therefore, in order to reduce cost and system complexity, it would have been obvious to one of ordinary skill to make the 3D sensor a lower resolution than the resolution of the 2D image sensor since there is no reason for the 3D sensor to have a resolution powerful enough to determine the leads, edges, and corners of an object like the 2D image sensor.

In addition, simply substituting the image sensor of Leonard with the image sensor of Eberhard, to arrive at the claimed invention would have been obvious since the principle of operation of Leonard's device would be unchanged if the two sensor areas were different resolutions and therefore, the results would have been predictable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3-5, 7-11, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard et al. (US Patent 7,034,272 B1) hereinafter referenced as Leonard in view of Eberhard et al. (US Patent 5,355,309) hereinafter referenced as Eberhard.

Regarding claim 9, Leonard discloses a method and apparatus for evaluating integrated circuit packages having three dimensional features. In addition, Leonard discloses at least one light source (12) that emits light towards the object, which reads on claimed, **"at least one light source that emits light towards the object"**, as exhibited in figures 2 and 3.

In addition, Leonard discloses a sensor (10) comprising a first area of pixels (38,40) having a first degree of resolution, the first area imaging three-dimensional geometrical characteristics of the object; and a second area of pixels (42) having a second degree of resolution, the second area imaging two-dimensional characteristics of the object (balls, leads, edges, and corners), wherein the first area of pixels (38,40) and the second area of pixels (42) absorb electro-magnetic radiation from the object (26) and to convert the electro-magnetic radiation into electrical charges, which reads on claimed, **"a sensor comprising a first area of pixels having a first degree of resolution, the first area imaging three-dimensional geometrical characteristics of the object; and a second area of pixels having a second degree of resolution different from the first degree of resolution, the second area having two-dimensional characteristics of the object, wherein the first area of pixels and the second area of pixels absorb electromagnetic radiation from the object and convert the electromagnetic radiation into electrical charges"**, as disclosed in column 12 lines 23-47 and exhibited in figures 3, 10, and 17.

However, Leonard fails to explicitly disclose that the second area of pixels has a higher degree of resolution different from the first degree of resolution. However, the examiner maintains that it was well known in the art to provide **"a second area of pixels having a second degree of resolution different from the first degree of resolution"**, as taught by Eberhard.

In a similar field of endeavor Eberhard discloses a cone beam spotlight using multi-resolution area detector. In addition, Eberhard discloses using an image sensor with a high resolution part and a low resolution part for 3-D imaging, wherein the high resolution part is used to image the small specific parts of interest of an object which reads on claimed, **"a second a second area of pixels having a second degree of resolution different from the first degree of resolution"**, as disclosed in column 7 lines 25-68, and exhibited in figures 1 and 3.

Leonard teaches using an imager with two sections, one for imaging smaller specific 2D characteristics such as balls, edges, leads, and corners of an IC and one for imaging the 3D characteristics in a much broader perspective. Eberhard teaches a multiresolution sensor wherein the high resolution part of the sensor is used to image the details of the object, while the lower resolution part of the sensor is used to image the object in a broader sense. Therefore, it would have been obvious to one of ordinary skill in the art to apply the technique of using high resolution to image the details of an object and lower resolution to image the other aspects of the object, as taught by Eberhard, to the sensor (10) of Leonard so that the pixel area (42) has a higher resolution than the pixel area (38,40) to achieve the predictable result of imaging the

details of the object such as balls, edges, leads, and corners with better accuracy. In addition, simply increasing the resolution of the pixel area (42) of Leonard is not dependent on any other aspect of the device.

Regarding claim 10, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 9), in addition, Leonard discloses an output register (34) arranged to read out the charges received in the sensor (10), which reads on claimed, **"an output register arranged to read out the charges received in the sensor",** as exhibited in figures 5-8.

Regarding claim 11, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 9), in addition, Leonard discloses at least two output registers (34) arranged to read out the charges received in the sensor (10), which reads on claimed, **"at least two output registers arranged to read out the charges received in the sensor",** as exhibited in figures 5-8.

Regarding claim 13, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 11), however, the combination fails to explicitly disclose that the second area of the sensor is provided with color filters wherein each color has a separate output register. However, the examiner takes official notice of the fact that it was well known in the art at the time of the invention to provide

"wherein if the second area of the sensor is provided with color filters, each color picked up has a separate output register".

The combination teaches a CMOS sensor used to capture the 3D and 2D images. Color filters in CMOS image sensors such as Bayer filter arrays are well known in the art. In addition, splitting the colors up so that each color has a separate output register is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art to provide color filters over the 2D area of the image sensor to achieve the predictable result of capturing color data, since capturing the 2D information in color is in no way dependent on the other aspects of the device, and to apply the technique of providing each color with a separate output register to achieve the predictable result of a quicker readout.

Regarding claim 14, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 10), in addition, Leonard discloses an A/D converter (30) arranged to convert the electrical charges from an analog to a digital format, wherein the output register (34) is a digital output register, which reads on claimed, **"an A/D converter arranged to convert the electrical charges from an analog to a digital format, wherein the output register is a digital output register",** as exhibited in figures 4 and 5.

Regarding claim 15, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 9), in addition, Leonard discloses an

image/signal processing unit arranged to analyze the electrical charges, which reads on claimed, **"an image/signal processing unit arranged to analyze the electrical charges",** as exhibited in figures 7 and 8. Specifically, Leonard discloses a separate processor may analyze the image as disclosed in column 5 lines 29-46.

Regarding claim 16, Leonard discloses a method and apparatus for evaluating integrated circuit packages having three dimensional features.

In addition, Leonard discloses a first area of pixels (38,40) having a first degree of resolution, the first area imaging three-dimensional geometrical characteristics of the object; and a second area of pixels (42) having a second degree of resolution, the second area imaging two-dimensional characteristics of the object (balls, leads, edges, and corners), wherein the first area of pixels (38,40) and the second area of pixels (42) absorb electro-magnetic radiation from the object (26) and to convert the electro-magnetic radiation into electrical charges, which reads on claimed, **"a first area of pixels having a first degree of resolution, the first area imaging three-dimensional geometrical characteristics of the object; and a second area of pixels having a second degree of resolution different from the first degree of resolution, the second area having two-dimensional characteristics of the object, wherein the first area of pixels and the second area of pixels absorb electromagnetic radiation from the object and convert the electromagnetic radiation into electrical charges"**, as disclosed in column 12 lines 23-47 and exhibited in figures 3, 10, and 17.

However, Leonard fails to explicitly disclose that the second area of pixels has a higher degree of resolution different from the first degree of resolution. However, the examiner maintains that it was well known in the art to provide **"a second area of pixels having a second degree of resolution different from the first degree of resolution"**, as taught by Eberhard.

In a similar field of endeavor Eberhard discloses a cone beam spotlight using multi-resolution area detector. In addition, Eberhard discloses using an image sensor with a high resolution part and a low resolution part for 3-D imaging, wherein the high resolution part is used to image the small specific parts of interest of an object which reads on claimed, **"a second a second area of pixels having a second degree of resolution different from the first degree of resolution"**, as disclosed in column 7 lines 25-68, and exhibited in figures 1 and 3.

Leonard teaches using an imager with two sections, one for imaging smaller specific 2D characteristics such as balls, edges, leads, and corners of an IC and one for imaging the 3D characteristics in a much broader perspective. Eberhard teaches a multiresolution sensor wherein the high resolution part of the sensor is used to image the details of the object, while the lower resolution part of the sensor is used to image the object in a broader sense. Therefore, it would have been obvious to one of ordinary skill in the art to apply the technique of using high resolution to image the details of an object and lower resolution to image the other aspects of the object, as taught by Eberhard, to the sensor (10) of Leonard so that the pixel area (42) has a higher resolution than the pixel area (38,40) to achieve the predictable result of imaging the

details of the object such as balls, edges, leads, and corners with better accuracy. In addition, simply increasing the resolution of the pixel area (42) of Leonard is not dependent on any other aspect of the device.

Regarding claim 17, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 16), in addition, Leonard discloses the three-dimensional geometrical characteristics include, width, height, and volume, which reads on claimed, **"wherein the three-dimensional geometrical characteristics include width, height, and volume",** as exhibited in figures 7-9.

Regarding claim 18, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 16), in addition, Leonard discloses the two-dimensional characteristics include structural orientation (corners, edges) and position, which reads on claimed, **"wherein the two-dimensional characteristics include [features which are representative of defects], structural orientation, and position",** as disclosed in column 12 lines 23-47.

However, the combination fails to explicitly disclose that the two-dimensional characteristics include cracks, structural orientation, and position. However, the examiner takes official notice of the fact that it was well known in the art at the time of the invention to specifically provide **"wherein the two-dimensional characteristics include cracks"**.

The combination teaches an image sensor with that can capture two-dimensional characteristics representative of a defective IC, but not specifically cracks on the IC. Cracks are well known to be indications of defective ICs. Therefore, it would have been obvious to one of ordinary skill in the art to provide that the two-dimensional characteristics include cracks for the purpose of finding defects to efficiently reject an IC defects before processing as disclosed in column 12 lines 23-26.

Regarding claim 3, Leonard and Eberhard, the combination discloses everything claimed as applied above (see claim 16), however, the combination fails to explicitly disclose **“wherein at least one of the two areas is provided in its entirety or partially with color filters in order to image the object in color”**. However, the examiner takes official notice of the fact that it was well known in the art at the time of the invention to provide **“wherein at least one of the two areas is provided in its entirety or partially with color filters in order to image the object in color”**.

The combination teaches using a CMOS image sensor to capture 3D and 2D image characteristics. Using a color filter such as a Bayer filter with CMOS image sensors to produce a color image is well known in the art. Therefore it would have been obvious to one of ordinary skill in the art to provide a color filter over the CMOS image sensor or a part of the image sensor to achieve the predictable result of capturing color data.

Regarding claim 4, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 16), however, Leonard fails to explicitly disclose **“wherein the first area is designed as a matrix having N rows and M columns, that the second area is designed as a matrix having X rows and Y columns and that Y is b multiplied by M columns, where b is an integer greater than zero”**. However, the examiner maintains that it was well known in the art to provide **“wherein the first area is designed as a matrix having N rows and M columns, that the second area is designed as a matrix having X rows and Y columns and that Y is b multiplied by M columns, where b is an integer greater than zero”**, as taught by Eberhard.

In addition, Eberhard discloses wherein the first area (12) is designed as a matrix having N rows and M columns, that the second area is designed as a matrix having X rows and Y columns and that Y is b multiplied by M columns, where b is an integer greater than zero, which reads on claimed, **“wherein the first area is designed as a matrix having N rows and M columns, that the second area is designed as a matrix having X rows and Y columns and that Y is b multiplied by M columns, where b is an integer greater than zero”**, as exhibited in figure 1.

Leonard teaches using an imager with two sections, one for imaging smaller specific 2D characteristics such as balls, edges, leads, and corners of an IC and one for imaging the 3D characteristics in a much broader perspective. Eberhard teaches a multiresolution sensor wherein the high resolution part of the sensor is used to image the details of the object, while the lower resolution part of the sensor is used to image the object in a broader sense. Therefore, it would have been obvious to one of ordinary

skill in the art to apply the technique of using high resolution to image the details of an object and lower resolution to image the other aspects of the object, as taught by Eberhard, to the sensor (10) of Leonard so that the pixel area (42) has a higher resolution than the pixel area (38,40) to achieve the predictable result of imaging the details of the object such as balls, edges, leads, and corners with better accuracy. In addition, simply increasing the resolution of the pixel area (42) of Leonard is not dependent on any other aspect of the device.

Regarding claim 5, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 4), Leonard discloses the surface (36) with the IC package is moved with respect to the sensor (10), in column 6 lines 31-67. However, the combination fails to explicitly disclose that time delay integration is used on the second area. However, the examiner takes official notice of the fact that it was well known in the art at the time of the invention to provide **"wherein time delay integration is used on the second area"**.

The combination teaches a sensor which has a high resolution 2D imaging section and a low resolution 3D imaging section wherein the surface with the IC package is moved with respect to the sensor. Images of a moving object taken using time delay integration are well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art to provide that the 2D imaging section captures images using time delay integration for purpose of improving the signal to noise ratio.

Regarding claim 7, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 16), in addition, Leonard discloses wherein the first area (38,40) and the second area (42) are arranged parallel in a transverse direction as two separate units, which reads on claimed, **"wherein the first area and the second area are arranged in parallel in a transverse direction as [two separate units]",** as exhibited in figure 10. However, the combination fails to explicitly disclose that the two areas are one integral unit. However, the examiner takes official notice of the fact that it was well known in the art at the time of the invention to provide **"one integral unit"**.

The combination teaches a sensor with two separate areas as two separate units. Sensors with multiple areas as one integral unit are well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art to apply the technique of providing the multiple sensor areas as an integral unit to achieve the predictable result of taking up less space.

Regarding claim 8, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 16), in addition, Leonard discloses wherein the first area (38,40) and the second area (42) are arranged parallel in a transverse direction as two separate units, which reads on claimed, **"wherein the first area and the second area are arranged in parallel in a transverse direction as two separate units",** as exhibited in figure 10.

Regarding claim 19, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 16), however, Leonard fails to explicitly disclose **"wherein the second area of pixels has a greater pixel density across the sensor in a direction perpendicular to a scanning direction than the first area of pixels"**. However, the examiner maintains that it was well known in the art to provide **"wherein the second area of pixels has a greater pixel density across the sensor in a direction perpendicular to a scanning direction than the first area of pixels"**, as taught by Eberhard.

In addition, Eberhard discloses, **"wherein the second area of pixels (14) has a greater pixel density across the sensor (10) in a direction perpendicular to a scanning direction than the first area of pixels (12)"**, as exhibited in figure 1.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Leonard by specifically providing **"wherein the second area of pixels has a greater pixel density across the sensor in a direction perpendicular to a scanning direction than the first area of pixels"**, as taught by Eberhard, for the purpose of reducing cost and complexity of the device since the resolution needed for the 2D images used to determine leads, edges, and corners, is not necessary for the 3D images which are only used to measure an amount of light at different positions as disclosed in Eberhard (column 7 lines 15-25).

Regarding claim 20, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 9), however, Leonard fails to explicitly

disclose **"wherein the second area of pixels has a greater pixel density across the sensor in a direction perpendicular to a scanning direction than the first area of pixels"**. However, the examiner maintains that it was well known in the art to provide **"wherein the second area of pixels has a greater pixel density across the sensor in a direction perpendicular to a scanning direction than the first area of pixels"**, as taught by Eberhard.

In addition, Eberhard discloses, **"wherein the second area of pixels (14) has a greater pixel density across the sensor (10) in a direction perpendicular to a scanning direction than the first area of pixels (12)"**, as exhibited in figure 1.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Leonard by specifically providing **"wherein the second area of pixels has a greater pixel density across the sensor in a direction perpendicular to a scanning direction than the first area of pixels"**, as taught by Eberhard, for the purpose of reducing cost and complexity of the device since the resolution needed for the 2D images used to determine leads, edges, and corners, is not necessary for the 3D images which are only used to measure an amount of light at different positions as disclosed in Eberhard (column 7 lines 15-25).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard in view of Eberhard further in view of Aoyama (US Patent 6,320,618 B1).

Regarding claim 12, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 11), however, the combination fails to explicitly disclose the first and second areas of the sensor are each read out on a separate output register. However, the examiner maintains that it was well known in the art to provide **"wherein the first area and the second area of the sensor are each read out on a separate output register"**, as taught by Aoyama.

In a similar field of endeavor Aoyama discloses s semiconductor image sensor with a plurality of different resolution areas. In addition, Aoyama discloses the first area (103) and the second area (101) of the sensor (fig. 6) are each read out on a separate output register (11) which reads on claimed, **"wherein the first area and the second area of the sensor are each read out on a separate output register"**, as exhibited in figure 6.

The combination teaches an image sensor wherein a first area of the image sensor is low resolution and captures 3D image profiles, and a second area is high resolution and captures 2D image profiles, wherein the two separate profiles are outputted to a shift register. Aoyama teaches an image sensor with a first area having low resolution and a second area having high resolution wherein each area has a separate shift register. Therefore, it would have been obvious to one of ordinary skill in the art to apply the technique of using two separate shift registers for the two image profiles of the combination to achieve the predictable result of a quicker read out.

<u>Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard in view of Eberhard further in view of Spears et al. (US Patent 7,027,193 B2) hereinafter referenced as Spears.</u>

Regarding claim 6, Leonard and Eberhard, the combination, discloses everything claimed as applied above (see claim 16), however, the combination fails to explicitly disclose **"wherein at least one of the areas is provided with filters for different wavelengths in order to minimized crosstalk"**. However, the examiner maintains that it was well known in the art to provide **"wherein at least one of the areas is provided with filters for different wavelengths in order to minimized crosstalk"**, as taught by Spears.

In a similar field of endeavor Spears discloses a controller for photosensor array with multiple different sensor areas. In addition, Spears discloses wherein at least one of the areas is provided with filters (IR filter) for different wavelengths in order to minimize crosstalk, which reads on claimed, **"wherein at least one of the areas is provided with filters for different wavelengths in order to minimize crosstalk"**, as disclosed in column 4 lines 32-33.

The combination teaches an image sensor with different sensor areas. Spears teaches an image sensor with different sensor areas wherein one of the areas filters for a different wavelength. Therefore, it would have been obvious to one of ordinary skill in the art to apply the technique of filtering the IR light out of one of the sensors to achieve the predictable result of blocking unwanted light.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL BERARDESCA whose telephone number is (571)270-3579. The examiner can normally be reached on Mon- Fri 8:30am-6:00pm EST (Alternate Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571)272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Berardesca
Examiner
Art Unit 2622

/P. B./
Examiner, Art Unit 2622
July 29, 2009

/Sinh Tran/
Supervisory Patent Examiner, Art Unit 2622